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CLINICAL LECTURES.

ON THE LATERAL OPERATION OF LITHOTOMY,

With Observations Concerning the Causes of Stone in the Bladder, and its Geographical Distribution in the United States. Delivered November, 1877, at Jefferson Medical College Hospital.

By S. D. GROSS, M.D., LL.D., D.C.L. Oxon., Professor of Surgery in the Jefferson Medical College of Philadelphia.

(Reported by Frank Woodbury, M.D.)

GENTLEMEN: I desire to occupy your attention to-day with the case of a boy who has been brought to me on account of suffering in the bladder, strongly denotive of the existence of stone, for which I will now examine him.

After briefly adverting to the history of the case and the course of the disease, I shall examine into his present condition, and pass in rapid review over the principles that should guide you in your search for a vesical calculus, and in performing the lateral operation of lithotomy. In conclusion, I shall ask your attention to the consideration of some points in connection with the causes of stone, and the geographical distribution of calculous disorders in the United States.

The clinical history of this case may be very briefly summed up thus: Edwin K., 12 years of age, a native of Delaware, has suffered from urinary trouble as long as he can remember, having had attacks of difficult and painful micturition coming on at irregular periods, which are often so severe as to make him bend forward and grasp some near object

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for support, the urine meanwhile being voided in drops or suddenly stopped in its course; at other times it is passed with less inconvenience, but is followed by a constant aching pain in the bladder and surrounding parts. The prepuce is quite long, from frequent pulling to relieve the distress of dysuria. His appetite is good; the bowels are regular; and the general health is not seriously impaired; in short, all the functions, excepting the vesical, seem to be well performed, and an examination of the urine shows that there is no disease of the kidneys.

In sounding for stone, I usually prefer an instrument with a rather short curve, especially in young subjects, and it should never be so large as to distend the urethra. Palpable proof of the presence of a concretion is frequently obtained at the moment of introducing the sound, the stone being immediately encountered on entering the bladder; but in some cases, especially where the stone is small, it is much more difficult of detection, and may even successfully elude our efforts. The operation of sounding, although apparently simple and easily performed, is one not devoid of danger in unskilful hands; death having resulted in a number of cases from carelessness or improper interference. Certain principles should guide you in the operation, some of the more important of which I will briefly mention. In the first place, a patient should be to a certain extent prepared for the proceeding; the operation, for instance, should never be performed when he is fatigued by a long journey, or when suffering from a "fit" of the stone. Interference is, of course, improper when there is serious disease of the urethra, prostate gland, bladder, or kidneys. The examination should be conducted with the utmost gentleness, and should not be unduly protracted, as it might provoke violent cystitis or even fatal peritonitis.

During sounding the patient lies on his back, with the head and shoulders slightly elevated and the lower extremities somewhat flexed and separated, so as to relax the abdominal muscles. Adults are sometimes sounded in the erect posture; chil-

dren never, except under particular circumstances. The bowels, if at all distended, should be emptied by a dose of oil or by an enema before the operation; but the urine should be retained for several hours, from three to four ounces being the average quantity required to enable us to perform the operation in a satisfactory manner. In a large quantity of fluid a small calculus might easily escape detection; or it might hide itself in a fold of mucous membrane, if an insufficient amount be present. Should the urine pass off prematurely, it may become necessary to inject a few ounces of tepid water through a catheter at the time of examination. In young children, in order to prevent crying and struggling, it is generally necessary to give an anæsthetic, but rarely in adults.

Before introducing the sound it should be carefully warmed and oiled, otherwise it may excite spasmodic contraction of the urethra, or shock the patient, and cause rigors and urethral fever. In case the stone is not encountered at once, the instrument must be carried successively through the different parts of the bladder, and particularly the post-prostatic portion or bas fond; a procedure which may be facilitated by introducing the left forefinger into the rectum and lifting up the posterior wall of the bladder. When the prostate is hypertrophied, this manipulation is particularly required. The metallic "click," caused by striking the sound against the stone, is characteristic; but this noise can only be elicited, as a rule, when the concretion is very hard and compact. In phosphatic calculi it is either very faint or entirely absent. By carrying the instrument around the calculus, information regarding its size may be obtained, and also as to whether it is loose or encysted, single or multiple. The composition of the stone may be inferred from the sound produced upon striking it, and by the character of its surface, whether smooth, irregular, dense, or friable. The calculus in the present case is one of considerable size, if we may judge from the rational signs and the testimony of the sound.

The question of treatment naturally

follows detection of the stone. Of the different internal remedies—alkalies by the mouth, or acids by the urethra—I will not stop to speak. Nor shall I have the time to discuss the operation of crushing the stone, or lithotrity, as it is improperly termed, which has been so frequently employed of late, especially in adults; I shall briefly mention the chief points to be observed in the performance of what is known as the lateral operation of cutting for stone, as this is the method which I prefer above all others for ordinary cases, and which I have most frequently performed. The operation, as practised at the present day, is as perfect as it is possible for such an operation to be, and in the hands of a skilful surgeon is capable of yielding the most gratifying results. With these remarks, I shall now proceed to its demonstration upon the patient whom I have just sounded: This precaution of previous sounding should always be adopted, and the presence of the stone fully established at the time of operation; otherwise a patient may be exposed to all the risks of cutting for stone, where no calculus exists, an awkward blunder which has, unfortunately, been committed more than once in the practice even of eminent surgeons.

Since the introduction of anæsthetics, the patient is no longer tied hand and foot as in former times. At all events, I myself long ago abandoned this practice, although our British brethren, I believe, still observe it, for what reason it would be difficult to say. The patient, being fully under the influence of chloroform, is brought down to the edge of the table, the buttocks extending a little beyond. The knees and thighs are flexed and the limbs separated by two assistants; the staff is introduced into the bladder and hooked up well under the pubic symphysis, the handle being slightly turned to the right so as to make the left side of the perineum rather prominent. The staff is deeply grooved on its convex surface to serve as a guide to the knife into the bladder. The staff-holder stands at the left side of the patient and raises the scrotum, keeping it out of the way of the operator. The person who is intrusted

with this function should be well instructed in his duties, as a great deal of the success of the operation depends upon the manner in which he discharges them. It is impossible to lay too much stress upon this point.

The instruments needed in the operation—a long narrow-bladed scalpel, a probe-pointed bistoury, several pairs of forceps, a scoop, and a rubber syringe—are arranged upon a tray in the order in which they are needed by the side of the surgeon. The patient being at the edge of the table, the operator takes his position in front of him, either sitting on a low chair, or kneeling upon his left knee, as I am in the habit of doing. It is hardly necessary to say that the perineum, if covered with hair, should be well shaved, as a preliminary step to the operation. Everything being thus prepared, and care taken that the bladder is pretty well distended with urine, the surgeon introduces his forefinger into the rectum to assure himself of the position of the staff, and proceeds with his task. The external incision begins just at the left of the raphe of the perineum, about one inch and a quarter in front of the anus, and is carried obliquely downwards and outwards to a point a little more than midway between the verge of the anus and the tuberosity of the ischium. This incision only divides the skin and the cellulo-adipose tissues immediately beneath it, the depth depending upon the condition of the parts, some patients having a very deep perineum. The transverse artery of the perineum is generally divided in this stage of the operation, but it rarely requires to be ligatured, as the bleeding usually promptly ceases of its own accord. Placing the point of the left index finger in the upper part of the wound, the knife next cuts through the transverse perineal muscle, the triangular ligament, and the membranous portion of the urethra, the opening in the latter being made sufficiently large to admit the point of the index finger. Using this as a guide, the knife is inserted into the groove of the staff, and thence thrust on into the bladder, dividing in its course the neck of this organ and the left lobe of the prostate gland, in the

direction of the external wound; that is, obliquely downwards and outwards. Care must be taken, in this step of the operation, to hold the knife somewhat horizontally, otherwise there will be great danger of wounding the rectum, which, as an additional security, should be gently pressed over towards the middle line, and held out of the way by the finger in the wound. The staff is withdrawn as soon as the bladder is fully opened.

If it is necessary that the bladder should contain urine when the patient is sounded, it is still more essential that the urine should be retained in operating for stone. If this precaution were neglected, the knife might easily transfix both walls of the viscus, and cause death from peritonitis. As soon as the bladder is opened, a gush of urine takes place, generally bringing the stone with it to the mouth of the wound. The staff is now withdrawn, and the calculus seized with the forceps, guided upon the finger lying in the bottom of the wound, and extracted pretty much in the same manner as the obstetrician removes the child's head in instrumental labour. If necessary, the wound may be enlarged with the probe-pointed bistoury, or the stone may be broken and extracted in pieces, taking great care not to injure the bladder and prostate gland. After extraction, the bladder should be examined for other calculi, and carefully washed out with tepid water to rid it of any debris and blood clots it may contain. If the calculus be soft or friable, it may be necessary to use the scoop for its removal.

In regard to the length of the incisions in this operation, a few words may be said. These must of course measurably depend upon the size of the calculus. For many years past, I have contented myself with comparatively small incisions, especially in children and young persons, in whom the parts are always very extensible, readily yielding under the pressure of the fingers, the forceps, and the stone during the extraction. In children, I invariably use the finger for enlarging the wound in the prostate gland and neck of the bladder, greatly preferring this procedure to making a large incision; and I can assure

you that I have never, in any of my cases, met with any bad consequences from it. On the contrary, I am fully satisfied that it is, in every respect, the safest practice. In elderly subjects, this plan is of course inadmissible, owing to the greater density of the structures concerned in the deeper portions of the wound.

In performing this operation we necessarily divide, as already stated, the transverse perineal artery running along the posterior surface of the transverse muscle; but it rarely requires a ligature except when enlarged by prolonged vesical irritation. When the incision is carried too high up, the artery of the bulb may be opened; a mishap which is sure to be followed by a copious and troublesome hemorrhage, very difficult to arrest, owing to the great depth at which the vessel is situated.

The pudic artery in its normal situation under the ramus of the ischium, is said to be sometimes wounded; but I have never seen this accident, although cases are reported, among others, one by Dr. Physick, who devised a pair of forceps for its ligation. Most of such accidents have been caused by the use of the gorget or lithotome caché. When the knife is employed the vessel is in no danger.

A great deal has been said about the division of the prostate gland in this operation leading to the formation of abscess from infiltration of urine. However this may be, I am certain that, in the great majority of cases, this gland is divided to its full extent in lateral lithotomy. Indeed, how could it be otherwise? I know I have myself divided it in most of my cases, but have never witnessed urinary infiltration; chiefly because the effused blood and lymph effectually seal the surfaces of the wound so that the urine cannot, under ordinary circumstances, force its way into the connective tissues.

When oozing of blood is excessive after the operation, it sometimes becomes necessary to plug the wound. For this purpose we may use Dupuytren's tube and chemise, or a female catheter, to which is attached a circular piece of linen, introduced into the bladder and packed lightly with lint. Or the wound may be

temporarily plugged with ice, a soft sponge, or a compress wet with Monsel's solution or some other styptic.

To relieve the pain and spasm consequent upon this operation, my invariable rule is to give the patient at once, as soon as he is over the immediate effects of the anæsthetic, a full dose of morphia hypodermically, taking care afterwards to repeat the remedy once or twice in the twenty-four hours, according to the amount of suffering.

In my earlier operations, following the practice of Liston and others, I fastened a tube in the bladder to conduct off the urine; but I soon became satisfied that the procedure was bad on account of its tendency to provoke irritation and spasm, and I therefore long ago abandoned it.

The quantity of blood lost in the operation just performed hardly amounts to a few tablespoonfuls. The boy will now be placed in his bed upon a draw sheet spread over a piece of soft oil-cloth with the perfect freedom of his limbs and without any application to the wound. The urine after it shall have accumulated to the extent of a few ounces will make an effort to escape by the wound, and in doing this it will be sure to cause more or less pain and spasm, owing to the difficulty which it is obliged to encounter from the clots which plug up the abnormal passage. After these clots have been washed away the flow will be more easy, and will so continue for the first twenty-four or thirty-six hours, when, in consequence of the swollen condition of the parts, it will be discharged by the urethra, accompanied with more or less distress, at least for some time. Gradually, as the swelling subsides, the urine will again flow by the wound until final closure is effected. Great attention must be paid to cleanliness throughout the treatment; the draw sheet must be frequently changed, and no means spared to make the patient comfortable.

The patient's diet for the first twenty-four hours must be of the most simple kind; fever and pain must be relieved with tincture of aconite and diaphoretic anodynes; and the bowels, unless contra-indications arise, must not be disturbed under six or seven days. If much blood has

been lost or the health was much broken prior to the operation, a milk diet, either alone or in the form of punch, will be the most suitable, aided by beef-essence, eggs, and quinia or quinia and iron. As convalescence advances, solid food is allowed. The bowels, if need be, are relieved by enema, castor-oil, or Rochelle salt, especially if they are distended with gas; but all active purgation is scrupulously avoided. Some of my patients have gone for upwards of a fortnight without an alvine evacuation. If the bowels are thoroughly moved, as they always should be, before the operation, there will be little need of laxatives, much less of cathartics.

The calculus after removal was found to weigh nearly one ounce and three quarters; it was of the uric acid variety, and was the largest stone of the kind that I ever removed from a child at this age. Uric or lithic acid concretions are the most numerous, and furnish probably about two-fifths of all the cases, the others being, in the order of frequency, uræammoniac, generally observed in children, oxalic, phosphatic or bone earth, ammoniaco-magnesian or triple phosphate, fusible, a combination of bone earth and triple phosphate—cystic, xanthic, fibrinous, and urostealith. These are often discharged while they are quite small.

Among the contra-indications to the operation may be prominently mentioned diabetes, Bright's disease, phthisis and the existence of the hemorrhagic diathesis, which, if previously recognized, would debar any prudent surgeon from exposing his patient to the risk of lithotomy. It is, however, worthy of remembrance that occasionally an apparently desperate case is followed by the most prompt recovery; and it is for this reason that I seldom refuse to operate under such circumstances, believing that a patient is always entitled to the benefit of a chance, however remote or unpromising. A man labouring under severe suffering from stone in the bladder is very much in the condition of one labouring under serious disease of the knee or ankle joint, attended with great wasting of the vital powers. If, in such a case, the offending part be removed,

the patient at once becomes comfortable, and begins to improve in health and strength; and so with a person worn out by vesical suffering. The moment the stone is removed, and the bladder is placed at rest, the unfavourable symptoms often vanish like magic. I have little respect for a lithotomist who selects his cases, and rejects all the bad or unpromising ones; or, in other words, who is unwilling to incur some risk as it regards his reputation as an operator.

The component elements of a calculus are found to be, in general terms, certain insoluble, inorganic constituents united into a mass by a small amount of some allotropic condition of albumen probably derived from the mucus of the vesical secretion, and epithelial scales. This sabulous material is, as a rule, one of the salts of the normal urine precipitated by some abnormal local condition. A stone may be simply composed of a single substance, or may be formed by successive or alternate layers of the different salts, forming concentric rings of deposit. As a general rule the simple or homogeneous concretions are small, the larger ones being mixed or compound in their structure. Regarding the causes of stone in the bladder, we are yet in the dark. Many have been suggested, but the relation of cause and effect has not been clearly established for any of them. It is but reasonable to suppose from the complex constitution of the urinary secretion and the relation that it bears to the condition of the system, its composition constantly changing, and closely connected with the processes of waste and repair and the functions of nutrition, that the presence of certain ingredients in abnormal proportion might be brought about by a variety of circumstances, and that stone in the bladder may depend upon a multitude of causes rather than upon any isolated source.

The circumstances determining the formation of a calculus may be considered under two heads — 1st. The immediate local or proximate causes. 2d. The remote, general, or predisposing causes.

Briefly reviewing the local or immediate causes, we find them to consist in the pre-

sence of foreign bodies in the bladder itself, and they may be either congenital or acquired. A child may be born with a vesical calculus, or the concretion may form around the contents of a dermoid cyst, or a tuft of hair. The acquired nuclei are either intrinsic or extrinsic in their origin. Those arising from internal sources may consist of nephritic calculi, an exfoliated sequester from necrosis of a pelvic bone discharged into the bladder, or small clots of blood, mucus, epithelium, pus, or fibrin. The extrinsic nucleus, or that introduced from without, either by accident or design, may consist of the greatest variety of articles that can be imagined.

Allied to the proximate causes, but acting among those favoring the occurrence of stone rather than directly determining its presence, are certain local disorders of the genito-urinary apparatus, such as stricture of the urethra, diseased prostate, cystitis, or kidney-disorders. In general terms it may be stated that any cause interfering with the complete evacuation of the bladder favours the formation of stone, both by retaining small renal calculi that would otherwise be expelled from the vesical cavity, and, indirectly, by retaining urine which produces cystitis by its decomposition and irritating deposits.

Among the remote or predisposing causes of this malady may be mentioned disorders of the nervous system, and especially injury to the spine. Disturbed or abnormal mental states have been thought to favour certain deposits that would lead to the formation of calculous concretions. This is unquestionably true of certain impaired conditions of health, especially when accompanied by deficient elimination of waste by the emunctories, as the skin, liver, or kidneys. This may explain the influence of individual diseases, such as inflammation, dyspepsia, constipation, cirrhosis of the liver, and others, that have been named as active agents in producing this affection. Malaria has also been cited as the cause of this as of so many other complaints. The rheumatic and arthritic diatheses, for obvious reasons, are more apt to be accompanied by stone in the bladder than

the tubercular or strumous, although phosphatic deposits are sometimes seen in tubercular patients.

The period of life, or the age of the patient, has less influence upon the formation of stone than is generally supposed. Calculus occurs at all stages of physical development, although, probably, most frequently in early life. The relation of occupation is an interesting one as bearing upon the influence of sedentary or active habits upon the formation of stone. Soldiers and sailors seem to enjoy almost an immunity from this disease; on the other hand, farmers and labourers furnish a large number of cases. But this may be connected with the causes next to be considered. Occupations requiring exposure to cold and wet are said to favour this affection, but this observation is not positively established. Station in life is a much more prominent factor in calculous disorders; it is a familiar fact that the poor are much more prone to the development of stone in the bladder than the rich. This may be due to poor diet, intemperance, imperfect clothing, disturbing the functions of the skin, and to unhealthy surroundings generally.

Although heredity is supposed to influence the development of this disease, I have not met with any examples of it in my own experience. It is asserted, however, by Oppenheim,¹ that it is hereditary in certain districts of Turkey, particularly Macedonia, Epirus, and Thessaly.

Women are much less liable to suffer from stone in the bladder than men, owing to the differences in the structure and size of the urethra, which, in consequence of its shortness and dilatibility in the female, enables her to expel almost any concretion with the urine the moment it descends from the kidneys. In males, on the contrary, even the smallest concretion generally remains imprisoned behind the prostate gland.

Race, also, materially affects the liability to calculous disorders. Negroes are much less subject than whites, but in what proportion has not been ascertained.

The Chinese and the Hindoos, on the other hand, as well as the natives of lower Egypt and of Turkey, seem to be especially liable to such affections. The lower classes in Russia and Denmark are much more disposed to the disease than the same classes in Sweden and Norway; and, while it is rare in some parts of the German empire, it is comparatively frequent in Hungary, France, and Holland.

It is reasonable to suppose that diet might have some effect upon the development of calculus, as highly nitrogenized articles of food, consisting principally of the different kinds of meat, would furnish an excess of urates. On the other hand, it is well known that the urine of herbivorous animals is markedly alkaline, a condition which, if it existed for any length of time in the human subject, would undoubtedly favour the deposit of those earthy phosphates that are ordinarily kept in solution in the urinary secretion by the acid phosphate of soda, assisted by free acids. An exclusive diet of fish or cereals might also yield a disproportionate amount of phosphates; other faults in diet would produce disordered digestion and imperfect assimilation, with its consequences already considered. But, in point of fact, the corn-bread diet of the South, which has been thought to be a cause of stone, does not warrant this opinion when closely inquired into. Dr. De Roos attributes the frequency of lithiasis in Russian children, among other causes, to the consumption of large quantities of farinaceous food, potatoes and cakes. The drink has also been blamed for this trouble. The use of hard water, or water containing large quantities of the earthy salts, for drinking purposes, has been thought to be an active cause; but some sections of country are perfectly free from stone, where this is the only water obtainable. Malt liquors and cider are still believed to favour the formation of stone, although no sufficiently definite facts have as yet been obtained to warrant this opinion. Wines, on the contrary, furnishing bitartrate of potassa, are highly praised for the prevention of stone; and the Rhenish provinces, where these wines are manufac-

¹ Über den Zustand der Heilkunde in der Europäischen und Asiatischen Türkei, p. 121. Hamburg, 1833.

tured and freely drunk, are reputed to enjoy a remarkable exemption from the disease.

Climate certainly has more or less effect as a predisposing cause, especially where the variations of barometric pressure and atmospheric humidity are excessive, irregular, and sudden. Although the data are very deficient, and scarcely justify the expression of a positive opinion, yet it is evident that, while such conditions interfere with the eliminative functions of the skin and throw more nitrogenous waste upon the kidneys for vicarious excretion, they also favour the production of inflammatory disorders and other disturbed states of the system that have already been referred to as efficient causes of the formation of stone. Temperature and its vicissitudes, as a general cause, are closely associated with the preceding and also with certain local influences that may most conveniently be reviewed under the appropriate geographical divisions in our concluding remarks. In very cold, as well as in tropical, regions stone is very rare. Some years ago I entered into an extensive correspondence with the most prominent surgeons in the different sections of the United States and other countries to determine, if possible, the geographical distribution of stone in the bladder, with a view of investigating its causes. The results of this study were placed as an appendix to the second edition of my work on *Diseases of the Urinary Organs*, published in 1854, this being the only attempt of the kind to place the subject in a tangible form that had been made on this continent up to that time. The conclusions then attained have not been changed by subsequent information and experience. The great stone-producing regions are Kentucky, Tennessee, Virginia, Ohio, northern Alabama, and, to a certain extent, Missouri. Pennsylvania furnishes a fair number, although relatively fewer cases, while New England is remarkably exempt. There is no essential difference in the climate, soil, and productions of Kentucky and Indiana, or in the food, drink, occupation, and modes of life of their inhabitants, yet in the one stone in the bladder is very frequent, and

in the other, very rare. Illinois also furnishes very few cases. Maine, New Hampshire, and Vermont are almost entirely free from this disease, and indeed Massachusetts might well be included in the statement, so few are the cases reported. In Connecticut and Rhode Island the disease rarely originates. Coming further south we find that New York, especially the western part of the State, furnishes a larger proportion, while in New Jersey the disorder is rarely met with; and there is good reason for believing that in Maryland it is scarcely more frequent. North and South Carolina produce very few cases. No data are in my possession concerning Florida, but it is probably governed by the same conditions as southern Alabama, where stone is comparatively rare. Louisiana, Mississippi, and Arkansas are comparatively free, while Missouri furnishes a fair proportion of cases. The disease, from all I can learn, is quite uncommon in Michigan, Iowa, Wisconsin, and the far West. California has such a changing population that the development of stone in a native would be a rare occurrence. Some few cases of operation have occurred, but most of these were probably upon persons of foreign birth. The Chinese population should furnish a good proportion of cases, as they have largely immigrated from the vicinity of Canton, where, judging from the experience of my friend Dr. Kerr and others, stone and calculous disorders are of very frequent occurrence.

In reviewing the geographical distribution of calculous diseases, we find that districts in which soft water is habitually used as drink are by no means exempt from this class of diseases, although limestone regions furnish by far the greatest number of cases. No immunity, certainly, is afforded by living in a freestone region. The food of districts similarly situated but not similarly afflicted, is exactly the same, as well as the climatic conditions. Why such differences should exist has not been determined. To my mind it is certain that no one cause has produced them, but the problem is a complex one, no doubt varying in its factors in each indi-

vidual case. As long as we remain unable in each single case to state positively the laws of the formation of stone in the bladder, we shall be at loss for any philosophical groundwork upon which to base a rational hypothesis concerning the general causes of calculous disorders.

The brief suggestions just reviewed may serve as nuclei for future observation, and lead ultimately to the further elucidation of the obscure but most interesting subject of the etiology of stone in the bladder.

In regard to the lad, the subject of the operation described in this lecture, it is proper to state that he went home at the expiration of the fourth week, perfectly well, with the wound completely healed. Nearly all the urine passed off by the natural channel by the end of the fourteenth day. He was requested to live for some time upon a simple diet, consisting mainly of eggs, fish, oysters, stale bread, and the lighter kinds of vegetables, with the free use of milk, until the tendency to irritability of the bladder, that always follows the operation, should finally subside and complete the cure.

HOSPITAL NOTES AND GLEANINGS.

A Severe Case of Acute Rheumatism complicated by Pericarditis and Broncho-pneumonia relieved at once, when the patient was apparently dying, by Salicylate of Soda, after failure of a fair trial of the Alkaline Treatment.

Dr. WHIPHAM reports (*Lancet*, Oct. 13, 1877) this case, which was under his care at St. George's Hospital. Apart from the severity of the rheumatic attack, it is specially interesting as an illustration, 1st, of the now universally acknowledged beneficial effects of salicylic acid in the treatment of acute rheumatism; 2d, of the fact that the administration of the drug does not appear to be contra-indicated in cases in which extreme prostration has resulted from a prolonged continuance of the rheumatic symptoms. The subject of the above notes, when admitted, was excessively weak and in acute pain, and with a view of relieving the articular pain full doses of alkali were

ordered, and at the same time two grains of quinine. That the bowels were purged was duly taken into consideration, and it was determined, in spite of the fact that alkalies in such full doses not unfrequently cause diarrhoea, to administer bicarbonate of potash, in the hope that the acute pain, which was by far the more prominent symptom, might be relieved. The urine, from having been turbid with urates, became, in five days, alkaline, but on the sixth day the patient was so extremely prostrated that a stimulant and tonic mixture was given. The diarrhoea continued, but was stopped on the eighth day by two full doses of bismuth. The pain in the joints was unrelieved. Little or no improvement took place, in spite of various remedies, for the next three weeks, and the question as to the advisability of administering salicylic acid was often debated and as often discarded, in consequence of the patient's great weakness and depression. His temperature had, however, as shown by the notes, come gradually down from 102° to 99°. On January 11, 1877, four weeks after his admission, he was ordered quinine, iron, and ether, with alcohol (brandy and port-wine), which he had been taking since admission; and three days later symptoms of broncho-pneumonia of the base of the left lung become manifest, and from January 15th to January 23d he took different mixtures, such as ammonia, iodide of potassium and bark, perchloride of iron, phosphoric acid, and strychnis. On January 26th he experienced a severe recurrence of his rheumatic pains, which had latterly been to some extent relieved, and on the following day, in spite of weakness so extreme that the boy's life was despaired of, it was determined, as a last resource, to try the effect of salicylic acid, and he was ordered salicylate of soda in scruple doses every two hours, and to continue his brandy. The result of this change of treatment was almost immediate; and the rapidity of the boy's improvement fairly astonished all who had watched the case. On January 26th all hopes of his recovery had been abandoned, and the salicylate of soda was commenced on the 26th. On the 27th he was much

easier and stronger, and three days later he was in "no pain, feels much better, no depression." Three days after that (February 2d) he was allowed to get up.

During the months of February and March he suffered from slight pains in various joints, which were always relieved by the drug, and he eventually left Atkinson Morley's Convalescent Hospital on March 28th, comparatively strong and in good health.

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Is the Human Eye changing its Form, and becoming Near sighted, under the Influence of Modern Education?—Dr. E. G. LORING recently read an interesting paper on this subject before the New York County Medical Society (*New York Med. Journ.*, Dec. 1877). He said that hereditary influence was an important element in the production of myopia, and, although statistics did not strongly indorse that view, he still held that legendary information should receive much credence. In regard to the influence of modern education, it was found that a larger proportion of those living in cities were near-sighted than those in country districts; and, moreover, in those cities where intellectual pursuits were greatest, the largest number of myopes were found. In savage nations near-sightedness was very infrequent, and it would seem, in some respects, that it was a result of education. While the intellectual classes in Germany showed a large proportion of myopia, it was not so found in those artisans who used their eyes on fine objects, as watch-makers and wood-engravers. In England, where there has always been great intellectual activity, by no means as large a ratio of near-sightedness had been detected as in Germany, and it became necessary to seek for other factors to explain the prevalence of myopia. Impaired nourishment, imperfect ventilation, together with a sedentary life, had a marked tendency in producing laxity of the tissues in general, including of necessity the coats of the eyeball; and, with the tension which resulted from close application of the sight, there was a great

probability of lengthening of the eye, or myopia, resulting. In New York the German children were found more often near-sighted than those of other nationalities. Dr. Loring said that undoubtedly myopia was hereditary, but that in all probability it could under no circumstances be developed; but he did not believe that of necessity it must increase in a nation engaged in literary pursuits. In the United States the normal eye predominated, and he thought it was due to the fact that the young were more in the habit of indulging in out-door sports than in Germany. The same was true of England. From a careful analysis of the myopic cases, it was found that between the ages of ten and fifteen the majority developed; or, in other words, at that time the tissues of the globe were more readily affected by strain of the muscles of the eye. It could be easily understood, under such an hypothesis, that the industrial classes were so little liable to near-sightedness, for they seldom reached the practice of the more intricate branches of their trade before their eighteenth year. In conclusion, Dr. Loring was of the opinion that, under proper precautions, the normal eye could be continued indefinitely. If children were not allowed to apply themselves too closely to their studies between their eighth and sixteenth years, and were, moreover, allowed the proper amount of out-door exercise, not much danger need be dreaded. It was important also to have the schools perfectly ventilated, and other hygienic conditions made as perfect as possible.

Skunk Cabbage in Chorea.—Dr. HORATIO C. WOOD has been trying skunk cabbage, or *dracontium*, in the treatment of chorea. "I am using," he says, "a saturated tincture of the rhizoma, and am giving from eighty to ninety drops three times a day. I began with sixty drops thrice daily. If you determine ever to make use of this drug you must not get your supply of it at the drug stores. You will find plenty of the fresh rhizomas for sale about the markets. The best time to lay in a stock of *dracontium* is in the fall, and it should be at once made

up into the form of a tincture. The root must not be dried before using. The effects of the skunk cabbage are probably due to some volatile principle which it contains. This woman has been taking *dracontium* for a short time, and is already able to notice a marked improvement of her symptoms. She has less of the jerking movements, and feels altogether vastly better."—*Med. Record*, Dec. 15, 1877.

Carbolic Acid in Eye Surgery.—Dr. JULIAN J. CHISOLM recommends (*Va. Med. Monthly*, Dec. 1877), in cases of warts upon the eyelids, episcleral thickening, epithelial growths upon the surface of the cornea, and granulated lids, carbolic acid applications, both as an efficient agent in correcting the pathological condition, and an innocent one, inducing no injury of any kind to the delicate tissues of so sensitive an organ. In marginal ulcers of the hair follicles, he would expect the same beneficial results that so constantly follow the application of carbolic acid to cutaneous ulcers.

In the treatment of catarrhal ophthalmia with muco-purulent discharges from the conjunctival surface, he has seen no marked benefit ensue from combining carbolic acid with the usual astringent remedies.

Harvard Medical School.—This school now requires all candidates for admission who do not possess degrees in letters or science from a recognized college, to pass a preliminary examination. We are glad to learn that the size of the class is considered as encouraging, and the falling off in the number of first-year students is by no means as large as was anticipated.

Boston Medical Library Association.—The late Dr. Edward H. Clarke has left his valuable medical library to this Association. We are glad to learn that the collection of the Library Association has greatly increased, and that it is fast outgrowing its present quarters.

OBITUARY RECORD.—In Boston, November 30, 1877, aged 57, EDWARD H.

CLARKE, M.D., late Professor of *Materia Medica* in Harvard College.

The death of Edward H. Clarke has left a gap in the ranks of New England's medical profession which will not easily be filled. Dr. Clarke held in Boston, for many years, the position of the favoured consultant. For a long while his local reputation as a teacher and a practitioner were unsupported by any very notable additions to medical literature. Of late years he won a wider fame by two little books¹ which dealt boldly and aggressively with the subject of the education of the two sexes. The matter of these essays gave rise to a sharp and prolonged discussion. An essay on the bromides, written in conjunction with Dr. Robert Amory; a *brochure* on Polypus of the Ear (1867); *A Century of American Medicine* and a few original articles and reviews contributed to the *American Journal of the Medical Sciences*, completes the short list of his medical papers. At the time of his death Dr. Clarke was busy with a book on apparitions, but nothing that he has left us fully explains the reputation of this brilliant and successful physician. The man was, in the estimate of all who knew him well, far greater than any work he has left behind him. In early life he overtaxed his brain, and was never afterwards able to endure prolonged study, so that he probably found the practice of his profession, with teaching, to be all that he could compass. The real distinction was in his position as a practical physician. Beyond this he was a man of wide culture, a charming companion, a ready speaker, and, as his clear and energetic style shows, a master of wholesome, vigorous, and simple English. A few years ago he was attacked with cancer of the rectum, and was suddenly forced to give up his medical work. The years of torment which followed were marvellous to those who, knowing what he suffered, saw his uncomplaining sweetness of life, his thought of and for others, his interest in and sympathy with all forms of science. The calmness with which he noted and discussed the character and progress of

¹ Sex in Education. The Building of a Brain.

his malady, was most remarkable. Nor did this noble fortitude give way when, in the midst of his terrible struggle with ever-increasing pain, his wife suddenly fell a victim to acute disease. It is to be hoped that the work on which he was engaged may find a fitting editor, and that we may thus get from his labours all that it is possible to get.

FOREIGN INTELLIGENCE.

Treatment of Hemoptysis from Lung Cavities.—Dr. R. DOUGLAS POWELL, Physician to Brompton Hospital for consumption, makes the following remarks on the treatment of hemorrhage from phthisical cavities (*Lancet*, Dec. 1, 1877).

The treatment is such as would be dictated by common sense. The most absolute rest in bed is imperative. Beware of the brandy-bottle. The first thing the friends of the patient naturally do when they find him faint from hemorrhage is to give him brandy. But this moment of faintness is just the period at which there is the opportunity for the hemorrhage to become staunched by the formation of a coagulum, and so long as the pulse does not absolutely fail, we should withhold stimulants, and avoid them throughout the treatment of the case. We can scarcely expect drugs to do much in such cases as these. Ergot in full doses and turpentine have been found most useful at this hospital. The momentary application of an ice-bag to the chest or between the shoulders appears sometimes to be useful. When the shock is great, opium will best relieve it. After a day or two, if the exhaustion and anemia be great, an astringent form of iron is often of great value, as the iron alum or the pernitrate of iron, but the effect of these remedies must be closely watched. In cases in which there is a tendency to recurrence of the hæmoptysis, such patients usually making blood fast, the diet should be carefully restricted, principally to fish and farinaceous food, without stimulants.

Phenicated Camphor in Diphtheria.—Dr. SOULEY called the attention of the Société de Thérapeutique (*Gaz. Hebdomadaire*, Nov.

28) to the great utility of this substance as a local application in those cases of diphtheria in which the deposits of false membranes constitute the initial and chief phenomenon—the danger arising from the steady and rapid propagation of these membranes, or the ulterior intoxication of the economy. Under the contact of the phenicated camphor the pseudo-membrane seems to lose its vitality, without that irritation of surrounding parts being produced, whether of the skin or mucous membrane, which is almost always caused by the various solid or liquid topical applications now in use. The solution employed by Dr. Souley is formed by dissolving powdered camphor in crystallized carbolic acid previously dissolved in alcohol (nine parts of the acid and one of alcohol), and which may be employed either in its pure state, or mixed with equal parts of sweet almond oil. He related four cases in support of this mode of treatment.—*Med. Times and Gaz.*, Dec. 8, 1877.

Lactic Acid as a Hypnotic.—Lactic acid, originally discovered by Scheele in fermented milk, is one of the products of the metamorphosis of tissue in muscle, and was suggested by Preyer as an hypnotic on theoretical grounds. Dr. Mendel has lately carried the theory into practice, giving from one to two drachms for a dose in the form of lemonade sweetened with sugar, and diluted, or in double those doses as an enema, neutralized with the same quantity of carbonate of soda, since in its pure state it acts as an irritant to the intestine. It is said to act best when conditions preventing sleep are of a mental nature, whilst it is inoperative if the sleeplessness is occasioned by pain.—*Lancet*, Dec. 8, 1877.

Therapeutic Action of Balsam of Peru.—Dr. E. WISS, at a late meeting of the Medical Society of Berlin, called attention to the long-known, but lately somewhat neglected, value of the balsam of Peru in wounds, and in some other affections. He states that in all cases of cuts and lacerations, if the balsam be applied to the part injured, a momentary smart is felt, which

is immediately followed by relief of the pain previously experienced, and the wound will be found to heal up with great rapidity, without suppuration, or indeed any signs of inflammation. The power of the balsam to prevent suppuration led him to employ it in chronic catarrh, as had been long ago recommended by various authors, and he mentions several cases in which the administration of it in the form of an emulsion with the yolk of egg, in the proportion of four parts of balsam to 120 of yolk, a teaspoonful being given every second hour, proved of the greatest service.—*Lancet*, Oct. 27, 1877.

Feeding per Rectum.—An article appears in *Deutsche Zeitschrift für Praktische Medizin* (No. 44, 1877), in which Dr. KAUFFMANN draws attention to the excellent results he has obtained from the plan of feeding the patients with pancreas and meat in cases of persistent and incurable intestinal obstruction. He states that he has had nine patients in the Kölner Bürger Hospital, seven of whom were suffering from cancer of the œsophagus, one from cancer of the pylorus, and one from chronic ulcer of the stomach. In all of these a cleansing enema was administered in the morning, followed by the introduction into the rectum of a mixture of a pound of finely divided beef and one-third of a pound of finely minced pancreas, the whole being freed from fat and connective tissue. Half of this quantity was used at noon and half at 6 P. M. The results were excellent; a solid, well-formed, healthy evacuation was discharged every day. The patients were able to walk about, and lived for nine or more months.—*Lancet*, Dec. 8, 1877.

Administration of Salicylic Acid.—Dr. GUENEAU DE MUSSY recommends the administration of salicylic acid by dissolving it in a syrup of gum by the aid of ten times its weight of brandy, and adding to it a little lemon juice.

Treatment of Epilepsy by Bromide of Zinc.—Experiments have been going on for some time in M. Charcot's wards at the Salpêtrière Hospital with bromide of

zinc as a remedy for epilepsy. It can be administered either in the form of pills or as a syrup. The pills contain each three-quarters of a grain of bromide of zinc. Commencing with one pill daily, the dose may be increased to twenty-five grains, increasing the quantity of bromide contained in each pill. The drug can be given in syrup according to the following formula: Bromide of zinc, 15 grammes; syrup of bitter orange-peel, 150 grammes; four, five, or six teaspoonfuls to be taken in the course of the day. The results obtained from the administration of these pills have been satisfactory.—*British Med. Journal*, Nov. 24, 1877.

A Sign of Hæmoptysis.—M. CONSTANTIN PAUL observed (*Gaz. Hebdomadaire*, Oct. 19), at the Société de Thérapeutique, that a sure prognostic sign of hæmoptysis is found in the recurrent pulse. If while the finger compresses the artery at the wrist, a pulsation is found in the hand, we may feel certain that the patient will spit blood. During the last ten years that he has paid attention to the point, he has come to regard this sign as certain.—*Med. Times and Gaz.*, Oct. 27, 1877.

The Poison of Typhoid Fever Conveyed by Water.—Local epidemics of typhoid caused by the evacuations of a patient gaining access to drinking water are well worthy of being placed on record. A recent number of the *Berliner Klinische Wochenschrift* contains an account of five cases in which infected water was the undoubted medium of communication. A miller, living on the bank of a small stream, was attacked by typhoid. His excreta were thrown daily into a small pond, which was connected with the stream by a ditch. The man recovered, but, seven weeks after his attack, his brother, who alone had nursed him, fell ill with serious symptoms of typhoid. The discharges from the bowels were very profuse, and were, as before, thrown into the pond. A few days afterwards four workmen, who were employed at a forge about a mile distant, were also attacked by typhoid, and the medical attendant, anxious to discover the source of the mischief,

found that all these men obtained their drinking water from the stream in question, there being no well available. Another case also occurred, the patient being a farm labourer who worked in a meadow near the forge, and who also drank the water from the stream. No case of typhoid had been known to occur in the neighbourhood for a very long time previously, and all the circumstances were in favour of the supposition that the disease had been transmitted through the medium of the water. There was no evidence as to the source of infection in the case of the first patient. The period of incubation was extraordinarily long, particularly in the case of the brother. The history of this small epidemic tends to support Dr. W. Budd's view, that a specific agent must be present for the production of typhoid fever. Probably the water of the brook in question often contained more or less ordinary fecal matter. The lesson to be drawn is that the excreta of typhoid patients should be completely disinfected, and, where possible, as in country places, should be deeply buried in spots far removed from any source of water supply.—*Med. Examiner*, Nov. 29, 1877.

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The Epidermis of the Genito-crural Fold and its vicinity as a breeding-place for the Oxyuris Vermicularis.—Under the above title Dr. MICHELSON, of Königsberg (*Berl. Klin. Wochenschrift*, No. 33, 1877), describes the case of a healthy boy of thirteen, who was brought to him with eczema of the scrotum and the neighbouring parts of the thighs, and in which he found numerous eggs of the *Oxyuris vermicularis* embedded in the affected epidermis. The perineal region, and the back and lower part of the scrotum were free. The itching is so severe as to prevent sleep. The question was, from whence had come the female oxyuris which had laid the eggs? On inquiry, the boy stated that he had suffered from rectal worms as long as he could remember; but as the oxyuris requires a skin covered with some glutinous material for it to travel on, and quickly dies on a dry epidermis, it was unlikely that the worms had crawled di-

rectly to the affected part along the perineum. It seemed most probable that they were carried on some fecal matter which adhered to the boy's shirt, the front border of which he had a trick of tucking back between his legs. An attempt was made by means of warm compresses to see whether the ova could be brought to maturity in this position, as Leuckart asserts that the embryos require the action of gastric juice in order to set them free. The experiment failed. The eczema was cured in a few days by warm baths, and a powder of one part salicylic acid and five parts starch.—*Med. Times and Gaz.*, Sept. 15, 1877.

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Detection of Particles of Hepatic Structure in Abscess of Liver.—Dr. SAMUEL FENWICK recommends (*Lancet*, Nov. 17, 1877) a careful examination of the discharge of a hepatic abscess, however produced, as the amount of hepatic or pulmonary structures that may be present is the best indication of the gravity of the case. The same method of procedure should also be extended to the examination of the discharge from other organs, and thus not only may the exact structure from which the pus proceeds be detected, but the rate at which the ulceration is progressing may be ascertained, and thereby a more accurate prognosis formed.

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Death from Chloroform.—The *Lancet* (Dec. 8, 1877) reports a case of death during the inhalation of chloroform preparatory to undergoing an operation, which occurred in South Wales.

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"Survival of the Fittest."—In a notice, with this heading, of the completion of the fiftieth year of publication of the *American Journal of the Medical Sciences* under its existing title, the *London Medical Times and Gazette* (Nov. 24, 1877) says:—

"This is universally acknowledged as the leading American Journal, and has been conducted by Dr. Hays alone until 1869, when his son was associated with him. We quite agree with the critic that this Journal is second to none in the language, and cheerfully accord to it the first place, for nowhere shall we find more able and

more impartial criticism, and nowhere such a repertory of able original articles. Indeed, now that the *British and Foreign Medico-Chirurgical Review* has terminated its remarkable career, the American Journal stands without a rival. The latter journal, which, under Dr. Forbes's masterly guidance, inaugurated a revolution in medical criticism, was commenced as the *British and Foreign Medical Review* in 1836, and was incorporated in 1843 with the *Medico-Chirurgical Review* (whence its compound name of *British and Foreign Medico-Chirurgical Review*), a journal of much older standing, founded by Dr. James Johnson in 1816, and for many years almost solely conducted by him. The *Boston Journal* assumed its present name in 1828, being formed by the fusion of two journals, one of which dated back to 1812. The writer of the article is in error in assigning an early date to the *Edinburgh Medical Journal*, commencing, as it did, with that title only in 1856, and being a continuation of the *Monthly Journal of Medical Science*, commenced in 1841. He has confounded it with the *Edinburgh Medical and Surgical Journal*, established in 1805, and terminating a career that, without exaggeration, may be designated as famous, in 1854.¹ The *London Medical Gazette*, founded in 1828,² was in 1852 incorporated with the *Medical Times*, founded in 1839, constituting the journal which the reader has now before him. The *Lancet* was established in 1823; but the *British Medical Journal*, originally founded by Dr. Hennis Green as the *Provincial Medical and Surgical Journal*, only dates back as far as 1841. The *Dublin Medical Journal*, published first on alternate months in 1832, then

as a quarterly, and now as a monthly, has always been a journal of which any country might be proud. Among existing Parisian medical journals, the *Gazette Médicale* dates from 1830, the *Gazette des Hôpitaux* from 1828, and the *Union Médicale* only from 1847. The *Révue Médicale*, formerly a monthly, and now a weekly journal, was first published in 1820; and the *Bulletin de Thérapeutique*, a fortnightly one, in 1837.¹ The best French medical periodical, the *Archives Générales de Médecine*, was commenced in 1823. In Italy the *Annali Universali di Medicina* has been published uninterruptedly from 1816 to the present time. The immense brood of German medical periodicals are of comparatively recent origin; but the celebrated year-books, so indispensable to all working at any subject, date from 1834 (*Schmidt's Jahrbücher*) and from 1841 (*Canstatt's* and now *Virchow's Jahresberichte*)."

Circulating Surgical Instrument Association.—The *Lancet*, Oct. 13, 1877, announces the formation in London of a Circulating Surgical Instrument Association. By an annual subscription of one guinea any medical practitioner may borrow, in good working order, any surgical instrument which may be required, either for operation or for the treatment of a case. This Association cannot fail to attract subscribers; indeed, its necessity being so manifest, the wonder is that no enterprising manufacturer has not hit upon the idea before.

OBITUARY RECORD.—On the 25th of September, aged 62, Dr. C. A. WUNDERLICH, Professor in the University of Leipzig. Dr. Wunderlich was the author of a *Handbook of Pathology and Therapeutics*, a *History of Medicine*, a treatise on the *Pathological Physiology of the Blood*; but the work by which he is best known is his classical book *On the Temperature in Disease*. His death is a loss to medical science as well as to the University of Leipzig.

¹ This is probably a misprint for 1831.

¹ We hope the Editor of the *Medical Times and Gazette* will pardon us for pointing out that, in his interesting sketch of medical journalism, the error on this point is his. The last number of the *Edinburgh Medical and Surgical Journal* (quarterly) was published April, 1855, and the first number of the *Edinburgh Medical Journal* appeared July, 1856, and having on its title-page "combining the *Monthly Journal of Medicine* and the *Edinburgh Medical and Surgical Journal*."

² December 8, 1827.

A NEW WORK ON THE EAR—Now Ready.

THE EAR; ITS ANATOMY, PHYSIOLOGY, AND DISEASES.

A PRACTICAL TREATISE FOR THE USE OF MEDICAL STUDENTS AND PRACTITIONERS.

By CHARLES H. BURNETT, M.A., M.D.,

Aural Surgeon to the Presbyterian Hospital; Surgeon in Charge of the Infirmary for Diseases of the Ear, Philadelphia.

WITH EIGHTY-SEVEN ILLUSTRATIONS.

In one very handsome octavo volume, of 615 pages: cloth, \$4 50; leather, \$5 50.

Recent progress in the investigation of the structures of the ear, and advances made in the modes of treating its diseases, would seem to render desirable a new work in which all the resources of the most advanced science should be placed at the disposal of the practitioner. This it has been the aim of Dr. Burnett to accomplish, and the advantages which he has enjoyed in the special study of the subject are a guarantee that the result of his labors will prove of service to the profession at large as well as to the specialist in this department. A few notices from the medical press are appended.

This is a treatise for medical students and practitioners, covering a field that has only lately been deeply and properly cultivated. Its aim is to be comprehensive as to its subject, and so thorough and accurate in the diagnosis and treatment as adequately to meet the wants of the specialist as well as of the general practitioner. It is one of the most complete works on the ear that has come under our notice; and the division and subdivision of its contents into different parts representing those of the ear is well adapted to present explicitness in demonstrating the anatomy, physiology, and pathology of the separate parts of this organ. An elaborate review of this work would be impossible in the short space allotted therefore, as the whole treatise is so well written and contains so much that is new and interesting that extracts could not be made in length enough to do credit to the author. In short, every subject in relation to the ear is practically detailed in its anatomy, physiology, pathology, and treatment, and the whole is a great acquisition to the catalogue of text-books for our profession.—*Phila. Med. Times*, Dec. 5, 1877.

As this is the most recent work on the ear, and also the best, we do not hesitate to recommend it to our readers, feeling convinced that a careful study of its contents will cause the early recognition of many apparently slight disorders, which, if not promptly and correctly treated, would ultimately lead to permanent deafness, and perhaps to death.—*Am. Supp. Obstet. Journ. Gt. Britain and Ireland*, Dec. 1877.

As the title of the work indicates, this volume treats of the anatomy and physiology of the ear, as well as of its diseases, and the author has taken special pains to make this difficult and complicated matter thoroughly clear and intelligible. The book is designed especially for the use of students and general practitioners, and places at their disposal much valuable material. Such a book as the present one, we think, has long been needed, and we may congratulate the author on his success in filling the gap. Both student and practitioner can study the work with a great deal of benefit. It is profusely and beautifully illustrated.—*Hospital Gazette*, Oct. 15, 1877.

The medical student and general practitioner have long felt the need of a book of this character on an organ so little understood and yet so important as the ear. The author has presented in the volume clearly but concisely the great advances which have been made of late years in otology and has indicated the direction in which further researches can be most profitably carried on. The work is divided into two parts. In Part I, the anatomy and physiology of the ear are minutely, yet explicitly, detailed in a manner not to be found in any of the ordinary

text-books. In Part II, the diseases and treatment of the ear are fully and practically presented. To the medical student and general practitioner, this work is indispensable, and will not be found void of interest to the specialist.—*Maryland Med. Journal*, Nov. 1877.

Considerably more space than we can allow to it would be required to give a notice worthy of this admirable work. The author has become well known as an authority on the affections of the organ of hearing; and the volume which, after considerable preparation, he now offers to the medical profession, completely justifies his reputation. The number of references to the literature of the subject is very large, and correspondingly valuable.—*New Remedies*, Oct. 1877.

This text book is prepared by an author of great distinction in his specialty, both as a practitioner and a teacher. His right to this distinction is manifest from an examination of the work he now presents the profession. We are constrained to give the book a cordial recommendation.—*Va. Med. Monthly*, Oct. 1877.

The book is finely illustrated, well printed, provided with a good index, and is altogether a very good presentation of our present knowledge of aural medicine.—*St. Louis Clin. Record*, Dec. 1877.

There is probably no other book of the kind in the English language which contains so concise and yet so complete an account of the numerous diseases to which the ear is liable. We can safely predict that every intelligent medical man who takes the trouble to make himself familiar with the leading facts concerning this class of disease, as given by Dr. Burnett, will not only admit that the time thus employed was far from being wasted, but that the earnest labors of Otologists within the last few years have taken away the sting of reproach contained in the hackneyed phrase that "nothing can be got out of the ear but feces and wax."—*Canada Med. and Surg. Journal*, Nov. 1877.

The book is handsomely illustrated with eighty-seven cuts, and is divided into two parts: the first treats of the anatomy and physiology of the ear; the second, of the diseases of the ear and their treatment. The style of writing is simple, practical, and plain, the subject-matter very complete; and it will surprise the uninitiated in the treatment of these diseases, how easily they may obtain valuable knowledge from the study of its pages.—*Am. Practitioner*, Nov. 1877.

Decidedly the best work on the ear for the general practitioner yet written.—*St. Louis Medical Brief*, Nov. 1877.

HENRY C. LEA, Philadelphia.